

REMARKS

Claim Rejections

Claims 1-4, 7-9, 11, 13-15, 17 and 19 are rejected under 35 U.S.C. §103(a) as being unpatentable over Applicant's Admitted Prior Art in view of Keely, Jr. et al. (US 6,756,970). Claims 5, 10 and 16 are rejected under 35 U.S.C. §103(a) as being unpatentable over Applicant's Admitted Prior Art in view of Keely, Jr. et al., and further in view of Dening et al. (US Pub No. 2003/0201938). Claims 6, 12 and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Applicant's Admitted Prior Art in view of Keely, Jr. et al., and further in view of Gettemy et al. (US 6,603,469).

Amendments to Specification

Applicant has amended the Specification as noted above to state that the sensor board is "a single layer". Since Fig. 3 as originally filed with the present application clearly shows the sensor board (134) to be a single layer, it is believed that no "new matter" has been added to the original disclosure by the foregoing amendments to the Specification.

Drawings

It is noted that no Patent Drawing Review (Form PTO-948) was received with the outstanding Office Action. Thus, Applicant must assume that the drawings are acceptable as filed.

Claim Amendments

By this Amendment, Applicant has amended claims 1, 7, 13-14, and 19 of this application. It is believed that the amended claims specifically set forth each element of Applicant's invention in full compliance with 35 U.S.C. § 112, and define subject matter that is patentably distinguishable over the cited prior art, taken individually or in combination.

Applicant has reviewed the outstanding office action and thought the present invention is patentably distinguishable over the primary reference to

Keely, Jr. et al., even in view of Denning's case or Gettemy's case. Applicant respectfully requests that the Examiner withdraw the claim rejections under 35 U.S.C. §103 for the reasons detailed below.

Applicant respectfully submits that one important point of the present invention is to **integrate the single layer of the sensor board which has the reflector surface into the backlight unit**. Namely the sensor board of the present invention is fabricated in the casing of the backlight unit and is composed of the antenna array layer and the reflector surface layer. Referring to the specification of the present invention, at page 10, in paragraph [0027], it recites: "...the sensor board is disposed in the casing of the backlight unit." Besides, referring to Figure 3 of the present invention, it clearly illustrates the sensor board (134) is one single layer.

Another important point of the present invention, as stated in the paragraph [0011] at page 5, is to provide **one single control circuit board** for simultaneous **driving the thin film transistors** of the display and **decoding the signals** received by the sensor board. Namely, the control board of the digitizer and the drive circuit board for driving the thin film transistors in the prior art are both integrated in the **single control circuit board** in the present invention, as illustrated in the paragraph [0028] at page 10. Thus, no extra circuit board and connecting bus are used in the present invention, thereby the electronic products are manufactured more portable and the prime cost is further reduced.

In Keely, Jr. et al., the reflector layer (56) and the digitizer grid (60) are separated individually and belong to two different apparatus. The reflector layer (56) is a component of the back light layer (16), but the digitizer grid layer (60) is a component of the digitizer layer (18). Keely, Jr. et al. different from the present invention because in the present invention the antenna array layer and the reflector surface layer both are integrated into one single layer of the sensor board.

Keely, Jr. et al., column 4, lines 10-20, states:

The back light layer 16 includes one or more optical films 50 which can serve to diffuse, collimate, filter and/or pre-polarize the light. The films 50 are held between the display and a light pipe 54 which guides and evenly distributes light

to be transmitted through the liquid crystal display (LCD), and a reflector 56 is held behind the light pipe 54.

The digitizer layer 18 includes a digitizer grid 60 bonded 62 to a digitizer substrate 64. A metal shield 66 is bonded to the back of the substrate 64 and the routing lines are bonded 68 behind the shield 66. A suitable pen, grid and controller can be obtained from Calcomp of Scottsdale, Ariz.

Keely, Jr. et al. clearly illustrates that the reflector (56) and the digitizer grid (60) are separated and belong to different devices.

Keely, Jr. et al., column 4, lines 33-42, states:

In making the digitizer layer 18, the digitizer grid 60 and substrate 64, which are supplied as a component and typically comprise an insulated flexible printed circuit, are laid flat with the grid routing lines also laid out flat. ... This forms a digitizer layer module that can be positioned or placed as a unit.

Keely, Jr. et al. clearly illustrates that the digitizer grid 60 is a component of the digitizer layer 18 and the digitizer layer 18 is an isolated unit.

Keely, Jr. et al. do not teach or suggest **fabricating the single layer of sensor board** which comprises the antenna array layer and the reflector surface layer.

Further, Keely, Jr. et al. do not suggest **integrating the sensor board into the backlight unit and disposing the sensor board in the casing of the backlight unit.**

The Examiner interpreted Keely, Jr. et al. to disclose an electronics layer which includes electronics for a display and digitizer layer. However, referring to fig 1 of Keely, Jr. et al., Applicant submits that Keely, Jr. et al. illustrate the source & gate PCB (22) and the pen controller PCB (72) as being two separated circuit boards. The same is supported by Fig. 2, the DRIVE ELECTRONICS (22) and the ADD'L ELECTRONICS are fabricated in two separated pieces of circuit boards. Keely, Jr. et al., in column 4, lines 62-67, states:

Next (3), the lines are folded around the layers 10, 16 and 18 and the drive electronics 22 are folded into place behind the grid layer 18. Finally (4), any additional electronics for the

display or grid, such as digitizer controller, are fixed in place inboard of the display edges.

Keely, Jr. et al. do not disclose that integrating the electronics for driving the thin film transistors and the electronics for decoding the signals received by the sensor board into one single circuit board.

Dening et al. is cited for teaching an antenna array.

The Examiner interpreted Gettemy et al. as disclosing the design of disposing the reflector surface layer below the antenna array layer. Applicant respectfully submits that the actual design in Gettemy et al. is distinct from that in present invention.

In Fig. 12 of Gettemy et al., between the transreflector (640) and the digitizer (610) disposed are the front polarizer (620) and LCD layer (630). Gettemy et al. is clearly distinguishable from the present invention in that the transreflector (640) and the digitizer (610) can not be integrated into one single layer of sensor board.

It is noted that Claims 1 and 14 have been amended to illustrate clearly the single layer of sensor board is integrated into the backlight unit which is believed to be patentably distinguishable from Keely, Jr. et al.

Claim 7 has also been amended to emphasize that only one single control circuit board is applied to drive the thin film transistors and decode the signals received by the sensor board.

Neither Applicant's Admitted Prior Art, Keely, Jr. et al., Dening et al., nor Gettemy et al. disclose, or suggest a modification of their specifically disclosed structures that would lead one having ordinary skill in the art to arrive at Applicant's claimed structure. Applicant hereby respectfully submits that no combination of the cited prior art renders obvious Applicant's amended claims.

Summary

In view of the foregoing amendments and remarks, Applicant submits that this application is now in condition for allowance and such action is respectfully requested. Should any points remain in issue, which the Examiner feels could

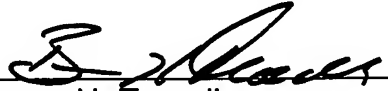
Application No. 10/624,478

best be resolved by either a personal or a telephone interview, it is urged that Applicant's local attorney be contacted at the exchange listed below.

Respectfully submitted,

Date: May 31, 2006

By:


Bruce H. Troxell
Reg. No. 26,592

TROXELL LAW OFFICE PLLC
5205 Leesburg Pike, Suite 1404
Falls Church, Virginia 22041
Telephone: 703 575-2711
Telefax: 703 575-2707

CUSTOMER NUMBER: 40144